Presence of high-level gentamicin-resistant (HLGR) *Enterococci* in humans and retail chicken products in the US, but not Denmark

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Background: HLGR *enterococci* (Enterococcus faecalis and E. faecium) are an increasing cause of human morbidity and mortality in the U.S., but are rare in Denmark. Because gentamicin is heavily used in the poultry industry in the U.S. but not Denmark, we surveyed retail chickens and human stools in both countries for HLGR enterococci.

Methods: In the U.S., three collaborating laboratories used enterococcal selective media (CNA agar) and Ford agar supplemented with arabinose and gentamicin (gentamicin-resistant selective media) to culture human stools and chickens purchased from grocery stores; enterococcal isolates were forwarded to CDC for species identification and antimicrobial susceptibility testing using broth microdilution. In Denmark, human stools were plated onto bile esculin azide media; susceptibility was determined with agar dilution. Chicken samples were plated onto Slanetz-Bartley agar; susceptibility was determined by disk diffusion.

Results: In the U.S., enterococci were isolated from 56% of 84 human stools using CNA agar. Sixty-one isolates were tested further; isolates from one (2%) yielded HLGR E. faecalis and one (2%) HLGR E. faecium. Using gentamicin resistant selective media, enterococci were isolated from 79% of 119 chickens. Isolates from 50 were tested further; isolates from 22 (44%) yielded HLGR E. faecalis and one (2%) HLGR E. faecium. In Denmark, 97 (34%) stools Yielded E. faecalts and 25 (9%) E. faecium; 58 (35%) chickens yielded E. faecalis, 61 (37%) E. faecium. No Danish enterococci isolates were HLGR.

Discussion: HLGR enterococci were isolated from many chickens purchased from grocery stores in the United States but not in Denmark. The high prevalence of HLGR , enterococci in chickens may be associated with the heavy use of gentamicin in the U.S. chicken industry. HLGR enterococci were also more common in human stools in the United States than in Denmark, possibly due to ingestion of chicken containing HLGR enterococci. Additional studies are needed to further evaluate the relationship between human and chicken HLGR enterococci.

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